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Aluminum wire 13 having an insulated outside coating 14 is used for ball bonding to bond pad 11. An aluminum wire such as that shown in U. S. Patent No. 4,860,941 to Alexander J. Otto may be used for such a purpose. Such an insulated aluminum wire has the necessary property that permits an axisymmetric bonding ball to be formed. This proper ball formation is critical for producing reliable ball bonds 15. Gold wire having an outer insulated coating such as that shown in U. S. Patent No. 5,396,104 to Masao Kimura may also be used. However, insulated aluminum wire is preferred, since both the bond pad and the connecting wire are made of aluminum, a strong bond is formed between the aluminum wire and the metallized aluminum bond pad to provide a reliably high quality connection due to the homogeneous material of the two mating parts. Also, aluminum wire is of a much lower cost than gold wire and yet it can resist higher temperatures, more severe vibrations, higher G-loading, and radiation hardening than the latter. Since the aforementioned aluminum wire is ball bondable like gold wire, the ball bonding operation may be carried out expeditiously in a widely available and automated fashion instead of wedge bonding which was the only means heretofore for bonding aluminum wire. Furthermore, since the bond wires 13 are insulated, it alleviates the problem of short circuiting due to their contacting one another which is not permissible in prior art devices using bare bond wires, and also ultra fine insulated aluminum wire thinner than 15 microns and having an oxidized outer insulation may be produced as the outer insulation would provide the protection and rigidity ("stiffness") required by the wire. The ultra fine bond wire permits the provision of